

REMARKS

Claims 1-3, 13, 24, 26, 37 and 38 have been newly canceled (including independent claims 1, 3 and 37). New independent claims 41-43 have been added. Dependent claims 4-12, 18-23, and 25 have been amended to depend from new independent claims 42 and 43. Claims 4-12, 18-23, 25 and 41-43 are now pending.

On page 2 of the office action, claims 1-5, 10, 12, 13 and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Frank (US 3,515,485) in view of Vertatschitsch *et al.* (US 5,294,075) and Morrison *et al.* (US 4,488,236). In ¶ 6 of the action, the Examiner further asserts it is old and well known in the art to control the rpms of rotors for various reasons. Applicant traverses this ground of rejection for the following reasons.

In the Rule 312 Declaration submitted herewith, the sole inventor states that "in the 60 years of modern tandem-rotor aircraft. All multi-rotor aircraft that have overlapping rotors use mechanical devices to lock the rotation of those rotors together" [see Rule 312 Decl., p. 8]. When the rotation of two rotors is mechanically linked, it should be apparent that their rotational speeds will always be the same and their

relative rotational positions will not vary. In contrast, the claimed invention is directed to a system that determines the relative rotational positions of first and second rotors and then adjusts the rotational speed of at least the first rotor when the relative rotational positions of the first and second rotors are outside a specified angular tolerance. This feature, substantially recited in new independent claims 41-43, is not disclosed in any of the references applied by the Examiner. For example, Frank explicitly states that "the blades of the fore and aft rotor[s] always maintain the same relationship with respect to one another" [see Frank, col. 8, ll. 55-57]. To the extent that the Examiner asserts that the feature of adjusting the rotational speed of a first rotor as a function of the relative rotational positions of first and second rotors was well-known in the prior art, Applicant traverses that assertion and requests that the Examiner cite to a specific publication for proof of his assertion.

The Rule 312 Declaration submitted herewith includes a detailed discussion of the Frank, Vertatschitsch and Morrison patents. Applicant respectfully submits that the distinctions set forth in that declaration with regard to the prior art clearly demonstrate that these references do not meet the threshold of a *prima face* case for obviousness. Accordingly,

Applicant requests that the obviousness rejection based on the combination of Frank, Vertatschitsch and Morrison be withdrawn

On page 4 of the action, claims 6-9 and 11 were rejected as being unpatentable over Frank, Vertatschitsch and Morrison as previously applied and further in view of Engels *et al.* (US 5,205,710). Applicant traverses this ground of rejection for the same reasons, set forth above, why claim 42, on which claims 6-9 and 11 now depend, is not obvious in view of Frank, Vertatschitsch and Morrison, and for the further reason that Engels also fails to disclose a controller that determines the relative rotational positions of first and second rotors and then adjusts the rotational speed of at least the first rotor when the relative rotational positions of the first and second rotors are outside a specified angular tolerance.

On page 5 of the action, claims 3, 18-25, 37 and 38 were rejected as being unpatentable over Bass *et al.* (US 6,789,764) in view of the aforementioned Frank, Morrison and Vertatschitsch patents. Applicant traverses this ground of rejection for the following reasons.

As previously discussed, none of the Frank, Morrison and Vertatschitsch patents discloses or suggests a system that determines the relative rotational positions of first and second

rotors and then adjusts the rotational speed of at least the first rotor when the relative rotational positions of the first and second rotors are outside a specified angular tolerance. Nor does the Bass patent disclose this feature. On the contrary, Bass describes a stoppable-rotor aircraft having two rotors, but as stated in column 8, lines 7-9, the rotors inherently rely on cross-shafting in order to stay in phase, so that their blades can never come into contact with one another.

The Rule 312 Declaration submitted herewith includes a detailed discussion of the Bass patent, as well as the Frank, Vertatschitsch and Morrison patents. Applicant respectfully submits that the distinctions set forth in that declaration with regard to the prior art clearly demonstrate that these references do not meet the threshold of a *prima face* case for obviousness. Accordingly, Applicant requests that the obviousness rejection based on the combination of Bass, Frank, Morrison and Vertatschitsch be withdrawn


In view of the foregoing, Applicant submits that this application is now in condition for allowance. Reconsideration of the application and allowance of claims 4-12, 18-23, 25 and 41-43 are hereby requested. Upon the allowance of claim 42, Applicant requests the opportunity to amend withdrawn claims 14-17 to depend

from claim 42, in which case claims 14-17 would then also be allowable.

Respectfully submitted,

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Date


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March 3, 2008

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